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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,493	11/12/2003	Jeff Andrews	MS1-1373US	7232

22801	7590	09/21/2005

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EXAMINER
NGUYEN, HAU H

ART UNIT	PAPER NUMBER
2676	

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/706,493	ANDREWS, JEFF
	Examiner	**Art Unit**	
	Hau H. Nguyen	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>03</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 June 2005</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-60</u> is/are pending in the application.

    4a) Of the above claim(s) <u>49</u> is/are withdrawn from consideration.

5)☒ Claim(s) <u>32-47 and 53-55</u> is/are allowed.

6)☒ Claim(s) <u>1-31,48,50-52 and 56-59</u> is/are rejected.

7)☒ Claim(s) <u>60</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Response to Arguments

1.   Applicant's arguments filed June 8, 2005 with respect to claims 1-31, 48, 50-52, 56-60 have been fully considered but they are not persuasive. In response to Applicant's argument that reference Leather et al. does not teach the claimed 'arbitrary ordering component', the examiner disagrees. It should be noted that claim language is given the broadest reasonable interpretation. As cited in previous Office Action, reference Leather et al. teach reconfiguring the rasterization pipeline such that the hidden surface removal may be placed at different locations within the pipeline depending on pipeline rendering mode, thus the order of components of the rasterization pipeline is arbitrarily enabled. Since reference Leather et al. meets the minimum requirements of claims 1-31, 48, 50-52, 56-60, the rejection of these claims is maintained.

Allowable Subject Matter

2.   Claims 32-47, 53-55 are allowed.

Reasons for Allowance

3.   The following is an examiner's statement of reasons for allowance:

        The prior art taken singly or in combination does not teach or suggest, a graphics system, among other things, comprising an arbitrary ordering component comprising a first group of multiplexers and a second group of multiplexers; the first group of multiplexers having individual inputs received from the stage assembly and individual outputs provided to the rasterization; and the second group of multiplexers having individual inputs received from the rasterization pipeline and individual outputs provided to the stage assembly.

The closest prior art, reference Leather et al. teaches a stage assembly, a rasterization

pipeline, and an arbitrary ordering component.

However, reference Leather et al. does not teach the arbitrary ordering having the

claimed first and second groups of multiplexers.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

5.   Claims 1-31, 48, 50-52, 56-59 are rejected under 35 U.S.C. 102(e) as being anticipated by

Leather et al. (U.S. Patent No. 6,636,214).

Referring to claims 1, 3, 7, 9, 13-15, 22-28, 48, 51, 56-58, Leather et al. teach a method

of dynamically reconfiguring a graphics pipeline with a hidden surface removal phase that may

be placed at different locations within the pipeline depending on pipeline rendering mode (an

arbitrary ordering component). When the pipeline operates in certain rendering modes, the

hidden surface removal operation can be performed early in the pipeline--allowing the pipeline

to discard obstructed pixels early and avoid wasting its time performing expensive operations on

image portions that are obstructed by other portions of the image. For other (e.g., alpha-

thresholding-based) rendering modes, the hidden surface removal operation is performed near

the end of the pipeline--when the pipeline has developed sufficient additional information to resolve depth comparisons based on such rendering mode (col. 4, lines 11-38) (alpha-blending is operated prior to other components in the rasterization pipeline). As shown in Fig. 5, Leather et al. teach a graphics processor coupled to the host processor 110 to receive graphics commands from main memory 112 (a computer-readable media for holding instructions), a command processor 200 performs command processing operations 200a that convert attribute types to floating point format, and pass the resulting complete vertex polygon data to graphics pipeline 180 for rendering/rasterization (a stage assembly) (col. 8, lines 51-67, and col. 9, lines 1-8). As also shown in Figs. 4 and 5, the graphics pipeline also comprises texture unit 500 which can perform texturing, fog, and alpha blending (col. 9, lines 48-58) (a rasterization pipeline). Figs. 6 and 7 show the process of reconfiguring the graphics pipeline, wherein the stages of the pipeline is performed without particular fixed order.

In regard to claims 2, 8, and 18, as shown in Fig. 7A, Leather et al. teach the graphics pipeline 118 illustrated as being an actual physical pipe carrying pixels P through the various processing stages of the pipeline (col. 11, lines 66-67, and col. 12, lines 1-2).

In regard to claims 4-6, 10-12, 19-21, Leather et al. teach a graphics pipeline has first and second alternate rendering modes and includes a texturing stage having an input and an output. A reconfiguration arrangement (arbitrary ordering component) selectively places a hidden surface removal stage alternately at the input or at the output of the texturing stage depending upon the graphics pipeline rendering mode (col. 4, lines 25-31) (receiving at the input, data from previous stage, and transmitting at the output, data to the next stage).

As for claim 16, as shown in Figs. 6 and 7, Leather et al. teach the ordering of the rasterization pipeline can be programmed by a programmer (col. 12, lines 9-14).

Referring to claims 17, 31, 50, and 52, as shown in Fig. 9, Leather et al. further teach an example implementation of z Compare/Depth Buffering Logic, which comprises a series of multiplexers 776 interposed between the stage assembly and the rasterization pipeline (col. 13, lines 13-25).

Referring to claims 29 and 30, Leather et al. teach texture processing (500a) including, for example, texture shadows and lighting through the use of projective textures (specular component) (col., lines 39-43). As cited above, Leather et al. teach the rasterization pipeline also includes alpha blending.

In regard to claim 59, as cited above, Leather et al. teach the rasterization pipeline comprising fog component, alpha blending component, texture component, and specular component, and alpha blending can be performed before other component of the rasterization pipeline.

6.   Claim 60 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

8.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Hau H. Nguyen whose telephone number is: 571-272-7787. The

examiner can normally be reached on MON-FRI from 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Matthew Bella can be reached on 571-272-7778.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D. C. 20231

or faxed to:

(703) 872-9306 (for Technology Center 2600 only)

Hand-delivered response should be brought to Crystal Park II, 2121 Crystal Drive,

Arlington, VA, Sixth floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the Technology Center 2600 Customer Service Office whose

telephone number is (571)-272-2600.

H. Nguyen

09/16/2005
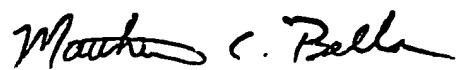
Matthew C. Bella

MATTHEW C. BELLA
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